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is certainly no justification for comparing the leaves of these plants to the stems, leaves, and flowers of a peony.

It will be seen, then, that a magazine devoted to ferns, lycopods, and equisetes, can hardly be said to be devoted to one group of plants, and this distinction will have to be reserved for the four or five fungus periodicals, and the French bryophyte journal, the *Revue Bryologique*.

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NOTES ON SOME FERNS FOUND DURING 1909

PHILIP DOWELL

While attending the botanical symposium, at Stamford, New York, during the first week of July, 1909, I was interested chiefly in noting and collecting some of the ferns of the region. Beside the more common ferns and some that are noted further on, I may here mention the following as found in the region: *Phegopteris Dryopteris* (L.) Fée, *P. Phegopteris* (L.) Und., *Filix fragilis* (L.) Und., *Matteuccia Struthiopteris* (L.) Todaro, *Dryopteris cristata* x *marginalis* Dav. About midway up Mt. Utsayantha there were a few plants of *Athyrium angustifolium* (Michx.) Milde growing in an open wet place. I did not see this fern elsewhere in the region about Stamford. Near the summit of the mountain there were *Dryopteris Goldiana* (Hook.) Gray, *D. dilatata* (Hoffm.) Gray, and *D. intermedia* (Muhl.) Gray. The two latter grew side by side, and I made a hurried but unsuccessful search for intermediates between them. On the wooded slopes of this mountain and of Bald Hill there were numerous little plants of *Botrychium lanceolatum* (Gmel.) Ångstr. and *B. neglectum* Wood. These

two grew side by side and showed no striking difference in habit and general appearance.

The Clinton fern was not found except in two of the swamps visited, while the crested fern was quite common, especially in the alder swamps. The Clinton fern evidently prefers woodland swamps with larger trees. In such a woodland, in which a small ravine spreads out into a little swamp, I found a few plants of the Clinton fern and also a few plants of the hybrid between this and *Dryopteris intermedia*.

To me the most interesting find in the region was perhaps, that of numerous plants or clumps of *D. cristata* x *spinulosa* (Milde) C. Chr. This was found in several swamps, and quite as abundant as Boott's fern, which was frequent, especially in the alder swamps. Some idea of its growth may be gained if I state that from one clump I removed over twenty fronds, but that no apparent difference in its size was afterwards noticeable.

This fern, *D. cristata* x *spinulosa*, was recorded in Bull. Torrey Club 35: 136. 1908, as having been found at Suffern, N.Y., and in two localities on Staten Island. In Fern Bull. 17: 35. 1909, E. J. Winslow records it from Barton Landing, Vt., and from Lowman, N.Y. L. S. Hopkins has found a number of specimens of this hybrid in eastern Ohio. During 1909 I found new stations for it at West Nyack, N.Y., and at Metuchen, N.J. However, in the vicinity of New York City it is rare compared to Boott's fern.¹ The latter I have found in nearly all swamps I have visited in which *D. cristata* (L.) Gray and *D. intermedia* were both found. Often it occurs only sparingly, but in some places quite abundantly. Even in places where *D. spinulosa* (Müll.) O. Ktze. is more abundant than *D. intermedia*, it has

¹ Cf. Observations on the Occurrence of Boott's Fern. *Torreya* 6: 205. 1906. New Ferns Described as Hybrids in the Genus *Dryopteris*. Bull. Torrey Club 35: 136. 1908.

been found more frequently than *D. cristata* x *spinulosa*. It seems that in this vicinity *D. intermedia* hybridizes more freely than *D. spinulosa*, while farther north the latter hybridizes more freely than here. This is borne out also by the fact that there is a similar proportion of hybrids between these two and the Clinton fern, *D. Clintoniana* x *spinulosa* Benedict being less abundant here than farther north or than the corresponding hybrid with *D. intermedia*.

A new station for *Dryopteris Goldiana* x *marginalis* Dowell was found at Waterloo, N.J., on August 9. Both the putative parents were found abundant along a mountain rill, and after a diligent search I secured a fine plant of the hybrid, bearing four fronds. This plant is now growing nicely in my garden, in a much drier situation than its original home.

Mr. R. C. Benedict sent me a plant of this hybrid from Jamesville, N.Y.,¹ during the first week in July of the year. This also is alive in my garden, side by side with plants from Newton, N.J., the first locality for this hybrid.²

In the swamps at Lodi and West Englewood, N.J., there grow side by side the Clinton, the crested and the Goldie ferns, and with them numerous puzzling intermediates. The cross between the Clinton and the Goldie may be reported with confidence, but the others are somewhat doubtful. A few of these puzzling plants have been transplanted at home for further study.

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¹ *Torrey* 8: 284. 1908.

² *Bull. Torrey Club* 35: 139. 1908.